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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/651,790	08/30/2000	Pary Baluswamy	CF/027 PROV.	2095
7590	03/17/2004		EXAMINER	
Samuel E Webb Trask Britt P O Box 2550 Salt Lake City, UT 84110			PIZARRO CRESPO, MARCOS D	
			ART UNIT	PAPER NUMBER
			2814	

DATE MAILED: 03/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/651,790

Applicant(s)

BALUSWAMY ET AL.

Examiner

Marcos D. Pizarro-Crespo

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 1-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Application/Control Number: 09/651,790 (Final Rejection)
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Attorney's Docket Number: 2269-4307US(99-1193.00/US)
Filing Date: 8/20/2000
Claimed Foreign Priority Date: none
Applicant(s): Baluswamy et al.
Examiner: Marcos D. Pizarro-Crespo

DETAILED ACTION

This Office action responds to the amendment in paper no. 30 filed on 1/20/2004.

Acknowledgment

1. The amendment in paper no. 30, filed on 1/20/2004, responding to the Office action in paper no. 1003, mailed on 10/22/2003, has been entered. The present Office action is made with all the suggested amendments being fully considered. Accordingly, pending in this Office action are claims 1-21.

Drawings

2. Figures 12 and 13 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ackmann (US 6271602) in view of Tanaka (US 5128283).

6. Regarding claim 16, Ackmann shows (see, e.g., figs. 4-7) all aspects of the instant invention including a method for forming an overlay target including a series of raised lines, the method comprising:

- a step of providing a substrate **200** having an upper surface
- a step of depositing a resist layer over the substrate **200** (see, e.g., col.8/ll.21-35)
- a step of patterning the resist layer to include a resist pattern defining the overlay target including the series of raised lines (see, e.g., col.8/ll.21-35)
- a step of etching the substrate **200** to form the overlay target including the resist pattern with the raised lines (see, e.g., fig. 5 and col.8/ll.21-35)

➤ a step of depositing a second layer **210** of material having an upper surface thereof substantially over a portion of the upper surface of the substrate **200**, wherein the second layer does not substantially conform to the topography of the overlay target; and wherein the upper surface of the second layer is substantially free, as deposited, of depressions in that portion of the second layer covering the overlay target in the substrate.

In reference to the claim language referring the function of the second layer, *i.e.*, allowing the operation of a registration tool regarding the series of raised lines of the overlay target, intended use and other types of functional language must result in a manipulative difference as compared to the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Along these lines, Ackmann (see, *e.g.*, col.8/ll.50) specifies that the second layer 210 is preferably a photoresist without any further details as to whether the second layer is capable of allowing the operation of a registration tool regarding the series of raised lines. Tanaka (see, *e.g.*, col.5/ll.40-47), on the other hand, teaches that having Ackmann's photoresist capable of allowing the operation of a registration tool regarding the series of raised lines would facilitate to precisely perform an alignment step without any problem.

Accordingly, it would have been obvious at the time of the invention to one of ordinary skill in the art to have Ackmann's photoresist being capable of allowing the

operation of a registration tool regarding the series of raised lines, as suggested by Tanaka, to facilitate to precisely perform an alignment step without any problem.

7. Regarding claim 17, Ackmann (see, e.g., col.10/ll.54) shows that the substrate comprises silicon.

8. Regarding claim 18, Ackmann shows that the resist layer may be deposited directly over the substrate (see, e.g., col.8/ll.21-35, col.12/ll.56-61, and fig. 19).

9. Regarding claim 19, Ackmann shows the substrate **200** including a top surface and a bottom surface, and a material layer **208** deposited over the top surface of the substrate **200**.

10. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being anticipated by Ackmann/Tanaka in view of Chiou (US 5883012).

11. Regarding claims 19 and 20, Ackmann/Tanaka shows most aspects of the instant invention (see paragraphs 4-7 above), except for the steps of depositing a material layer over the top surface of the substrate and depositing a resist layer over said material layer, wherein the step of etching the substrate comprises etching said material layer. They, however, shows that the resist layer may be deposited directly over the substrate (see, e.g., Ackmann, col.8/ll.21-35, col.12/ll.56-61, and fig. 19). Chiou (see, e.g., col.3/ll.31-50), on the other hand, teaches that depositing said material layer between the substrate and the resist layer can protect Ackmann's substrate from the etching step that follows.

Accordingly, it would have been obvious at the time of the invention to one of ordinary skill in the art to deposit a material layer between the substrate and the resist layer of Ackmann/Tanaka, as suggested by Chiou, to protect the substrate.

12. Claims 21 is rejected under 35 U.S.C. 103(a) as being anticipated by Ackmann/Tanaka in view of Ghandhi.

13. Regarding claim 21, Ackmann shows most aspects of the instant invention (see paragraphs 4-7 above). They (see, e.g., Ackamann/col.8/ll.21-35), however, fails to specify the etching technique he uses to form the overlay target in the substrate. Ghandhi (see, e.g., pp.589), on the other hand, teaches that using wet chemical etching have the advantage of keeping residual surface contamination to a minimum.

Accordingly, it would have been obvious at the time of the invention to one of ordinary skill in the art to use wet chemical etching to form the overlay target in the process of Ackmann/Tanaka, as suggested by Ghandhi, to minimize residual surface contamination.

Response to Arguments

14. Applicant's arguments with respect to claims 16-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

16. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

17. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. Papers should be faxed to Art Unit 2814 via the Art Unit 2814 Fax Center. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(703) 872-9306**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.

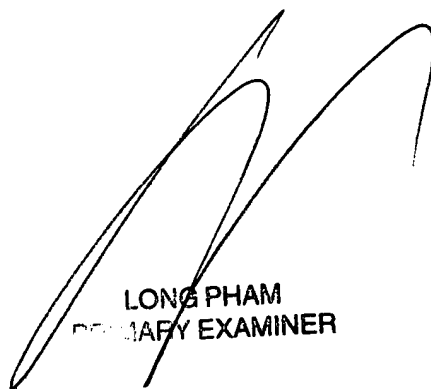
18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Marcos D. Pizarro-Crespo** at **(703) 308-6558** and between the hours of 9:30 AM to 8:00 PM (Eastern Standard Time) Monday through Thursday or by e-mail via Marcos.Pizarro@uspto.gov. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy, can be reached on (571) 272-1705.

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19. Any inquiry of a general nature or relating to the status of this application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

20. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/797 438/401, 462, 704, 706, 709-711, 719, 745, 783, 975	3/4/2004
Other Documentation:	
Electronic Database(s): EAST (USPAT, EPO, JPO)	3/4/2004



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